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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,794	03/08/2001	Julianna H. J. Brooks	BLP:106	6723

26818 7590 11/05/2002

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EXAMINER

MILLER, ROSE MARY

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 11/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/786,794

Applicant(s)

BROOKS ET AL.

Examiner

Rose M Miller

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 45-141 is/are pending in the application.
- 4a) Of the above claim(s) 58-83, 85-104 and 106-121 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 122-141 is/are allowed.
- 6) ☒ Claim(s) 45-58, 84 and 105 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of species 1 in Paper No. 8 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 59-83, 85-104, and 106-121 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### *Specification*

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
6. The substitute specification filed 08 March 2001 has not been entered because it does not conform to 37 CFR 1.125(b) because: the spacing at the top of the submitted substitute specification is insufficient to allow for the placement of the holes required for

holding the papers in the application. A new copy of the substitute specification is required if Applicant still wishes to have it entered into the application.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 55-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 55-57 are rejected as being confusing and indefinite. Claims 55-57 recite a long list of "biological structures". However, not everything listed is a "biologic structure", such as the cement/cement plate found in the middle of the list. Further confusion arises from the wording of the claims. Claim 45, from which all of these claims ultimately depend, recites "augmenting at least one function" of the targeted biologic structure. It is unclear how one augments "proteins", "capsule", "carbohydrates", "glycolipids", "endotoxins", "exotoxins" and many others recited in the long list provide. The definition of "augment" is "to make greater". What "function" of "carbohydrates" is augmented by the disclosed invention? Or how is the "capsule" augmented or made greater? The specification is unclear on exactly how each of these recited elements is "augmented" by being placed in a resonant state.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 45-46, 52, 54-56, and 105 are rejected under 35 U.S.C. 102(b) as being anticipated by **Findl (US 4,850,959)**.

**Findl** discloses a method for augmenting at least one function of a liver or pancreas (increasing the production of insulin) by targeting the biologic structure (liver) by inducing resonance in the biologic structure (column 3 lines 28-35 teaches that electromagnetic resonance is equivalent to acoustic resonance and can be achieved through the application of ultrasonic waves, the remainder of the patent teaches placing the liver in resonance to enhance or augment the functions of the liver).

With regards to claim 46, **Findl** includes applying at least one resonant frequency to the biologic structure and would inherently include a resonant acoustic frequency if ultrasonic was used as taught on column 3 lines 28-35.

With regards to claim 52, **Findl** discloses enhancing the function of the liver and pancreas which directly relates to augmenting the metabolism of the overall structure (the patient or animal). Therefore, the requirements of claim 52 have been met.

With regards to claim 54, **Findl** clearly discloses the biologic structure comprising an organ (liver).

With regards to claims 55-56, **Findl** clearly discloses the biologic structure comprising a liver.

With regards to claim 105, it is inherent in the application of ultrasonic energy to increase the function of the liver as disclosed by **Findl** to include means for generating an acoustic signal, means for transmitting the acoustic signal to the liver, and means for controlling the power level of the applied ultrasonic signal as it is well known in the art of targeting biologic structures that too high a power level would result in a disruption or destroying of the biologic structure instead of enhancing or augmenting the function of the liver being targeted.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 47-48, 58, and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Findl**.

With regards to claims 47-48, **Findl** discloses the claimed invention with the exception of applying at least a portion of an acoustic signature of the biologic structure or applying at least one substantially complete acoustic signature of the biologic structure. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply either a portion of an acoustic signature or a substantially complete acoustic signature of the biologic as each structure (liver) will have different characteristics and even characteristics which could change during the application of the ultrasound. Therefore, to enhance the output of the apparatus, it would have been obvious to one of ordinary skill in the art to utilize a series of resonance peaks found in the acoustic signature to match the acoustic treatment to the individual structure (patient).

With regards to claim 58, **Findl** discloses the claimed invention with the exception of specifically stating the use of selected frequencies that augment the targeted biologic structure but have no substantial deleterious effect on nearby, non-resonating structures. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such frequencies as one of ordinary skill would not want to damage surrounding tissues or structures, Furthermore, it has been well demonstrated in the art of applying ultrasound for medical purposes that the use of such

frequencies in combination with focused waves enables a specific area of the biologic structure to be targeted without affecting surrounding structures.

With regards to claim 84, it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect at least one signature of the targeted biologic structure and compare it against a reference or standard signature in order to calibrate the apparatus applying the ultrasound/acoustic so that the best results can be obtained from the application of the ultrasound/acoustic.

14. Claims 49-51, 53, 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Findl** in view of **Azure (US 5,908,444)**.

**Findl** discloses the claimed invention with the exception of the applying at least one resonant acousto-EM energy, at least a portion of an acousto-EM signature of the biologic structure, or at least one substantially complete acousto-EM signature of the biologic structure.

**Azure** relates the use of EM energy (electromagnetic energy) to acoustics at column 3 lines 19-29. Briefly, **Azure** teaches that the application of EM energy to a biologic structure results in acoustic energy being produced within the biologic structure. This acoustic energy is a version of the "acousto-EM" signature claimed.

Therefore, with regards to claims 49-51, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize either at least one resonant acousto-EM energy, at least a portion of an acousto-EM signature of the biologic structure, or at least one substantially complete acousto-EM signature of the biologic structure in the application in order to induce acoustic resonance as **Azure** clearly teaches using EM energy to produce acoustic energy within a biologic structure. As for the use of either a partial or substantially complete signature, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply either a portion of a signature or a substantially complete signature of the biologic as each structure (liver) will have different characteristics and even characteristics which could change during the application of the ultrasound. Therefore, to enhance the output of the apparatus, it would have been obvious to one of ordinary skill in the art to utilize a

series of resonance peaks found in the measured signature to match the treatment to the individual structure (patient).

With regards to claim 53, **FindI** discloses enhancing the function of the liver and pancreas which directly relates to augmenting the metabolism of the overall structure (the patient or animal). Therefore, the requirements of claim 53 have been met.

With regards to claims 57, **FindI** clearly discloses the biologic structure comprising a liver.

#### ***Allowable Subject Matter***

15. Claims 122-141 are allowed.

16. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a method for augmenting the growth of an aquatic species by determining at least one first resonant frequency of said aquatic species and applying said at least one first resonance frequency at a sufficient power intensity to cause said augmenting to occur.

The prior art of record fails to teach and/or suggest a method for augmenting the growth of an aquatic species by determining at least one first resonant frequency profile of said aquatic species, applying at least a portion of said first resonance frequency profile at a sufficient power intensity to cause said augmenting to occur; determining and applying at least one second acoustic resonance frequency profile by substantially repeating the steps above at a point in time after said aquatic species has grown in size; and repeating the step of determine at least one second acoustic resonance frequency profile to achieve additional augmentation of the aquatic species.

The prior art of record also fails to teach and/or suggest a method for augmenting the growth of a plant species comprising: determining at least one first resonant acoustic frequency of said plant species and applying said at least one first resonant frequency at a sufficient power intensity to cause said augmenting to occur.

#### ***Conclusion***



17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Colasante (US 4,538,596)** discloses prophylaxis of adhesions with low frequency sound.

**Oschman et al. (US 5,778,591)** discloses a method and apparatus for temporarily debilitating tuna and other fish.

**Baugh (US 5,935,516)** discloses a closed ecological system and method for supporting life.

**Duarte et al. (US 5,904,659)** discloses ultrasonic treatment for wounds.

**Sternheimer (WO 93/24645)** discloses a method for epigenetic regulation of protein biosynthesis by scale resonance.

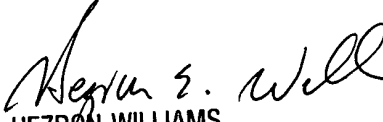
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M Miller whose telephone number is 703-305-4923. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 703-305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

RMM

RMM  
November 3, 2002

  
HEZRON WILLIAMS  
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